## Listing of Claims

This listing of claims will replace all prior versions and listings of claims in the Application.

1-12. (Canceled)

13. (Original) An active optical lattice filter for selectively processing an optical input signal, said lattice filter comprising:

a plurality of optical gain blocks spaced apart from one another in a linear array;

a surface grating coupler positioned between each pair of adjacent gain blocks in said array, each of said surface grating couplers disposed to transmit a portion of an optical signal received as an input from one of its adjacent gain blocks to its other adjacent gain block, and to reflect the remainder of said received input; and

each of the gain blocks is provided with controllable gain and delay characteristics respectively selected to produce an output from said array comprising an IIR when said input signal comprises an optical pulse.

14. (Original) The active lattice filter of Claim 13, wherein:

said gain blocks are respectively implemented by placing electrodes in spaced apart relationship upon an active region of semiconductor material to form corresponding gain regions therein; and

each of said surface grating couplers comprises a grating formed in the surface of said active region between adjacent gain regions.

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